## PATENT ABSTRACTS OF JAPAN

(11)Publication number:

2001-112100

(43)Date of publication of application: 20.04.2001

(51)Int.Cl.

H04S 7/00 // GO1S 11/14

(21)Application number: 11-283943

(71)Applicant:

ALPINE ELECTRONICS INC

(22)Date of filing:

05.10.1999

(72)Inventor:

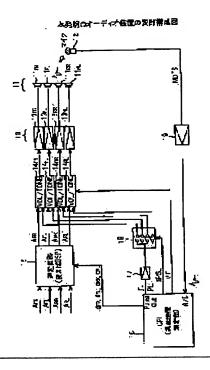
KONO SHIGERU

## (54) DELAY MEASUREMENT DEVICE AND AUDIO UNIT

## (57)Abstract:

PROBLEM TO BE SOLVED: To provide a delay measurement device that can measure a delay from a speaker to a listening point by one measurement and deliver sound from each speaker to the listening point accurately at the same time.

SOLUTION: A delay measurement section (CPU) 16 inputs a pulse signal PL to a speaker 11 and the speaker sounds sound in response to the pulse in space. A microphone 12 placed at the listening point detects the sound radiated from the speaker and gives it to a delay measurement section. A delay measurement section 16 measures a time from a pulse signal generating time until first positive and negative peaks from the microphone detection signal and selects a midpoint time between the positive and negative peak detection times for the delay from the speaker to the audio listening point.



## **LEGAL STATUS**

[Date of request for examination]

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of rejection]

[Date of extinction of right]

29.07.2004